



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,949	11/26/2003	Stephen Gold	100204298-1	9416

7590 02/19/2008
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

DANG, THANH HA T

ART UNIT	PAPER NUMBER
----------	--------------

2163

MAIL DATE	DELIVERY MODE
-----------	---------------

02/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/723,949	GOLD ET AL.	
	Examiner	Art Unit	
	Thanh-Ha Dang	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 40 and 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-39 are rejected in this Office Action.
2. Applicant cancelled Claims 40-41.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/04/07 has been entered.

Response to Amendment

4. Receipt of Applicant's Amendment filed on 07/04/07 is acknowledged.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 19 recites "a processor-usable tangible medium" is not described in the Specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Examiner is unclear to why "wherein the processing circuitry outputs the delta version to the other of the storage devices". There is no clear flow or coherent to distinctly point out the invention as described in the 2nd Paragraph ("processing circuitry ... delta version").

Claim 2 recites the phrase "a same data protection solution" that renders the claim indefinites because the claim includes elements not actually disclosed, thereby rendering the scope of the claim unascertainable. See MPEP § 2173.05(d).

Claim 19 recites the limitation "the effecting storage" on line 8 that is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 19 recites an article of manufacture comprising "a processor-usable tangible medium", which is in view of Applicant's disclosure, Specification page 15 [0063] wherein "exemplary processor-usable media may include any one of physical media such as "electronic, optical, electromagnetic, infrared, etc.", the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., floppy diskette, memory, etc.) and intangible embodiments (e.g., infrared, data signal, carrier wave, etc.). As such, the claim is not limited to statutory subject matter and is therefore non-statutory. Claims 20-22 are dependent of Claim 19, and therefore are also rejected.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,870,765 issued to Bauer et al. (Bauer), and further in view of US Patent No. 7,100,005 issued to Neil Pearl ("Pearl").

As to **Claims 1, 11, 15, 19 and 23**, *Bauer teaches a data management system comprising:*

- a plurality of storage devices (*Figure 1, block12 and block22a-x-z*) individually comprising a physical storage space (*Figure 1, wherein block12a-x-z illustrate physical storage space*), wherein the physical storage space of one of the storage devices is configured to store a baseline version of a data object (*Figures 1 and 3, wherein server central database (block10) has storage device (block12) which store before-image which is equivalent to a baseline version data object, column 2, lines 15-17*) and the physical storage space of an other of the storage devices is configured to store a delta version of the data object (*Figures 1-2, wherein clients (block20a-x-z) with local databases (22a-x-z) store delta version which is modifications detected by comparing the client data with a before-image of the client data, column 8, lines 3-20*); and

- processing circuitry configured to control storage operations of at least one of the storage devices (*Figure 1 wherein block11 corresponds to the processing circuitry, column 8, line 24*), to process a restore request with respect to the data object (*column 9, lines 34-39 wherein the synchronization process read on the restore request process limitation recited in column 1, lines 50-51*), to access the delta version from the other of the storage devices responsive to the restore request (*column 7, lines 45-46 wherein modifications are propagated via the synchronizer*), and to initiate communication of data of the baseline version and the delta version of the data object to a computer system (*Figure 1 wherein label15 and label25a-x-z illustrate initiating communication of data to a computer system, column 6, lines 51-55*),
- *Bauer does not explicitly teach* wherein the processing circuitry outputs the delta version to the other of the storage devices after determining that insufficient storage capacity exists at the one of the storage devices to store the delta version. However,
Pearl teaches wherein the processing circuitry outputs the delta version to the other of the storage devices after determining that insufficient storage capacity exists at the one of the storage devices to store the delta version (*Figure 3, block320, column 6, lines 2-13*). Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine record storage and retrieval teaching of Pearl with database synchronizer teaching of Bauer to provide method and system, which check storage device capacity before writing

data record into the storage device to provide an efficient record storage and retrieval solution (Pearl, column 2 lines 56-57).

As to **Claim 2**, *Bauer in combination with Pearl teaches wherein the processing circuitry is configured to allocate a same data protection solution to the delta version at both the one of the storage devices and the other of the storage devices (Bauer, column 7, lines 45-48 wherein conflicts are detected and resolved so that data can be shared among a plurality of nodes read on data protection solution limitation).*

As to **Claims 3, 14 and 21**, *Bauer in combination with Pearl teaches wherein a client agent (Bauer, Figure 2, block27 wherein the synchronizer represents the client agent) of the computer system is configured to combine the delta version (Bauer, Figure 2 wherein block22x-X illustrates the delta version) with the baseline version (Bauer, Figure 2 wherein block62x-X illustrates the baseline version which is represented by before-image log) to provide a restored version of the data object (Bauer, Figure 2 wherein the synchronizer provides in block60x-X the restored version of the data object which is represented by the replicated table, column 8, lines 3-20).*

As to **Claim 4 and 25**, *Bauer in combination with Pearl teaches wherein the processing circuitry (Bauer, Figure 3, block11) comprises processing circuitry of the one of the storage devices which stores the baseline version of the data object (Bauer, Figure 1, label21a-x-z, column 6, lines 18-24 wherein the central database (block12) stores the baseline version of the data object (block12a-z)).*

As to **Claims 5, 13 and 29**, *Bauer in combination with Pearl teaches* wherein the one of the storage devices is configured to receive the delta version from the computer system (*Bauer, Figure 1 via label15 and label25a-x-z show bi-directional connection among computer system to receive the modification/update that correspond to a delta version, column 2, lines 51-53*), and the processing circuitry is configured to forward the delta version to the other of the storage devices (*Bauer, Figure 6A wherein block310-340 forward the delta version to the other storage devices, column 11, lines 49-55*).

As to **Claims 6, 18, 22 and 30**, *Bauer in combination with Pearl teaches* wherein the processing circuitry is configured to forward the delta version to the other of the storage devices responsive to a status of capacity of the one of the storage devices (*Bauer, column 1, lines 52-54 wherein the updates (which correspond to the delta version) performed by either client or server are propagated to the other side when a connection is established that read on forwarding the delta version by the processing circuitry*).

As to **Claims 7, 16 and 27**, *Bauer in combination with Pearl teaches* further comprising a database (*Bauer, Figure 1, block12 and block22a-x-z*) configured to store information regarding storage operations of individual ones of the storage devices, and wherein the processing circuitry (*Bauer, Figure 1, block11 and block21a-x-z*) is configured to access the database to obtain a location of the delta version of the data object on the other storage device responsive to the restore request (*Bauer, column 6, lines 10-11 and lines 18-19*).

As to **Claims 17, 20 and 24**, *Bauer in combination with Pearl teaches* wherein the processing circuitry is configured to combine the delta version with the baseline version to provide a restored version of the data object (*Bauer, Figure 5A, wherein block115 and 120 illustrate the steps to combine the delta version with the baseline version to provide a restored version of the data object illustrated in block125, column 9, lines 34-65 and column 10, lines 23-31*), and to control the communication of the restored version of the data object to the computer system (*Bauer, Figures 6A-B, column 11, lines 29-42*).

As to **Claims 8 and 26**, *Bauer in combination with Pearl teaches* wherein the processing circuitry comprises processing circuitry of a client agent associated with the computer system (*Bauer, column 1, lines 64-66 wherein the database synchronizer is equivalent to a client agent*).

As to **Claim 9**, *Bauer in combination with Pearl teaches* further comprising a local area network configured to communicate the delta version intermediate the one and the other storage devices (*Bauer, Figure 1 wherein each client node represents a local area network, column 6, lines 16-24; wherein the bi-directional connection among network5, server10 and client20a-x-z illustrate local area network configured to communicate the delta version intermediate the one and the other storage devices*).

As to **Claims 10 and 28**, *Bauer in combination with Pearl teaches* further comprising a storage area network configured to communicate the delta version intermediate the one and the other storage devices (*Bauer, Figures 1-2, wherein*

block20a-x-z contain block22a-x-z which are bi-directionally connected through the network5 that constitutes the storage area network, column 6, line 53).

As to **Claim 12**, *Bauer in combination with Pearl teaches wherein the processing means of the other of the storage subsystem means comprises means for uncompressing data of the delta version, and for initiating communication of the uncompressed data of the delta version to the one of the storage subsystem means (Bauer, Figure 1 wherein label15 and label25a-x-z illustrate initiating communication of data to a computer system, column 6, lines 51-55).*

As to **Claim 31**, *Bauer in combination with Pearl teaches wherein the computer system is a host device external of the data management system (Bauer, Figure 1 displays computer system e.g. block10, block20a that is a host device external of the data management system).*

As to **Claim 32**, *Bauer in combination with Pearl teaches wherein the computer system is a host device external of the data management system and the computer system is configured to execute an application program to generate the baseline and delta versions of the data object (Bauer, Figure 1, block17 wherein the synchronizer represents the application program to generate the baseline and delta versions of the data object, column 2, lines 5-21).*

As to **Claim 33**, *Bauer in combination with Pearl teaches wherein the data object comprises a data file (Bauer, Figure 1, label12a-x-z represent data files, column 3, line 50).*

As to **Claim 34**, *Bauer in combination with Pearl teaches wherein the data object comprises a data file and the delta version of the data file only comprises changes made to the baseline version of the data file (Bauer, column 3, lines 38-41 wherein the modification, determined by a difference comparison between the current value in the active table and the before value in the before image table, corresponds to the delta version of the data file and the before image table corresponds to the baseline version that constitute the data object).*

As to **Claim 35**, *Bauer in combination with Pearl teaches wherein the delta version of the data file does not include content of the data file which is unchanged with respect to the baseline version of the data file (Bauer, column 2, lines 51-53 wherein the modification corresponds to the delta version of the data file excluding content of the data file which is unchanged with respect to the baseline version of the data file).*

Claims 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,870,765 issued to Bauer et al. (Bauer) and further in view of US Patent No. 7,100,005 issued to Neil Pearl ("Pearl") as applied to claims 15 and 19 above respectively, and further in view of Pub. No. US2004/0078602 issued to Rothbarth et al. ("Rothbarth").

As to **Claim 36**:

Bauer in combination with Pearl teaches all the elements of Claim 15 as stated above.

Bauer in combination with Pearl does not explicitly teach wherein the processing circuitry is configured to obtain the information regarding the capacity of the storage device responsive to the request.

Rothbarth teaches wherein the processing circuitry is configured to obtain the information regarding the capacity of the storage device responsive to the request (*Figure 4, block414-418, page 5 [0046, lines 10-12] wherein information regarding storage space availability is equivalent to information regarding the capacity of the storage device responsive to the request*). Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine method for sharing storage space teaching of Rothbarth with record storage and retrieval teaching of Pearl and database synchronizer teaching of Bauer to provide method and system which check device storage capacity.

As to Claim 37:

Bauer in combination with Pearl teaches all the elements of Claim 19 as stated above.

Bauer in combination with Pearl does not explicitly teach wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to access the information regarding the status comprising capacity information of the one of the storage devices responsive to receiving the request to store the delta version, and

wherein the initiation of the storage of the delta version responsive to analysis of the capacity information.

Rothbarth teaches wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to access the information regarding the status comprising capacity information of the one of the storage devices responsive to receiving the request to store the delta version, and wherein the initiation of the storage of the delta version responsive to analysis of the capacity information (*page 6 [0050, lines 41-49]*). Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine method for sharing storage space teaching of Rothbarth with record storage and retrieval teaching of Pearl and database synchronizer teaching of Bauer to provide method and system which determine capacity of storage device.

As to Claim 38:

Bauer in combination with Pearl teaches all the elements of Claim 19 as stated above.

Bauer in combination with Pearl does not explicitly teach wherein the code to initiate the storage of the delta version using the other of the storage devices responsive to the information indicating that the one of the storage devices has insufficient capacity to store the delta version.

Rothbarth teaches wherein the code to initiate the storage of the delta version using the other of the storage devices responsive to the information indicating that the one of the storage devices has insufficient capacity to store the delta version (*Figure 4, block414-418, page 6 [0050, lines 41-49]*). Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine method for sharing storage space teaching of Rothbarth with record storage and retrieval teaching of Pearl and database synchronizer teaching of Bauer to provide method and system which determine capacity of storage device.

As to Claim 39:

Bauer in combination with Pearl teaches all the elements of Claim 19 as stated above.

Bauer in combination with Pearl does not explicitly teach wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to initiate the storage of the delta version using the other of the storage devices to provide increased storage capacity of the data management system.

Rothbarth teaches wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to initiate the storage of the delta version using the other of the storage devices to provide increased storage capacity of the data management system (*Figure 4 wherein block409 initiates request for storing data, wherein*

block414 checks available storage capacity, wherein block416 designates the storage device, page 5 [0046, lines 19-21). Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine method for sharing storage space teaching of Rothbarth with record storage and retrieval teaching of Pearl and database synchronizer teaching of Bauer to provide method and system which verify storage device capacity and determine the storage device to store the data.

Citation of Pertinent Prior Art

9. The prior art made of record and not relied upon in form PTO-892 if any is considered pertinent to applicant's disclosure.

Response to Arguments

10. Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Ha Dang whose telephone number is 571-272-4033. The examiner can normally be reached on Monday-Friday from 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thanh-Ha Dang
Examiner, AU 2163

February 11, 2008


DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100